

Definition 0.1 The $\mathcal{Hilb}_f$ [category of finite-dimensional Hilbert spaces](http://planetphysics.us/encyclopedia/NormInducedByInnerProduct.html) is defined as the category whose [objects](#) are all finite-dimensional Hilbert spaces $\mathcal{H}_f$, and whose [morphisms](#) are linear maps between $\mathcal{H}_f$ spaces. The [isomorphisms](#) in $\mathcal{Hilb}_f$ are all isometric isomorphisms.

Furthermore, one also has the following, [general definition](#) for any Hilbert space.

Definition 0.2 The category $\mathcal{Hilb}$ of Hilbert spaces is defined as the category whose objects are all Hilbert spaces $\mathcal{H}$, and whose morphisms are linear maps between $\mathcal{H}$ spaces. The isomorphisms in $\mathcal{Hilb}$ are all isometric isomorphisms.

Remark 0.1

The category of $\mathcal{Hilb}$ Hilbert spaces has direct sums and is a Cartesian category.

"category of Hilbert spaces" is owned by [bci1](#).

<http://planetphysics.us/?method=l2h&from=objects&id=496&op=getobj>